Public Information Session: White Creek Dredging Project

DNREC

Division of Watershed Stewardship

Shoreline and Waterway Management Section

along with

Anchor QEA + Woods Hole Group JV

ANCHOR QEA JOINT VENTURE WOODS HOLE GROUP

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

Public Information Session: White Creek Dredging

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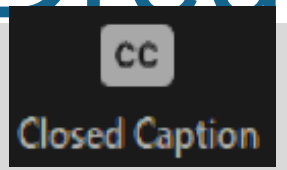
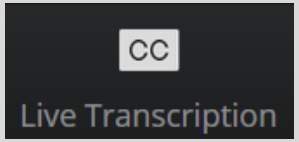
- To turn on captions, click the 

or 

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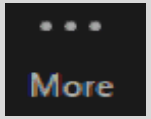
- If you don’t see this icon, click 

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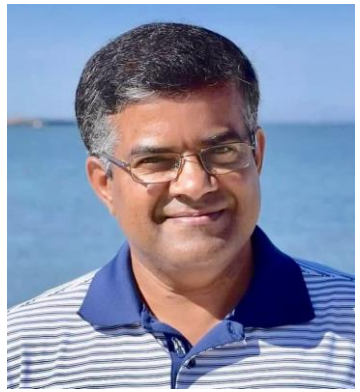
Public Information Session: White Creek Dredging Project

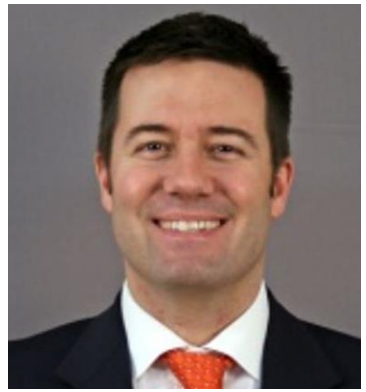
Project Team

Steve Bagnull
Anchor QEA

Travis Merritts
Anchor QEA



Ram Mohan
Anchor QEA



Dave Walsh
Woods Hole Group

Michael Powell
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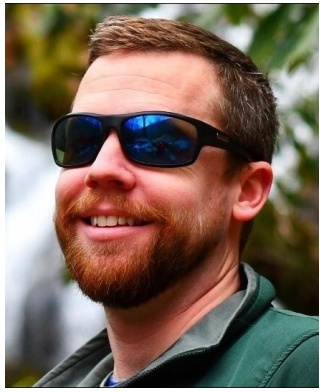
Ashley Norton
DNREC



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Meeting Agenda

Public Information Session: White Creek Dredging Project

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- Introduction to Project Team
- Overview of DNREC Waterway Management Program
- Presentation of White Creek Dredging Project
- Question and Answer Time

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Waterway Management Operations in Delaware

- For over 45 years the State of Delaware has conducted waterway management operations by:
  - Dredging
  - Marking navigational channels
  - Harvesting macro-algae
  - Removing abandoned vessel/derelict structure and debris
- Sediment management planning
  - Regional sediment management
  - Sediment as a natural resource
  - Engineering with nature
  - Research partnerships with academic institutions

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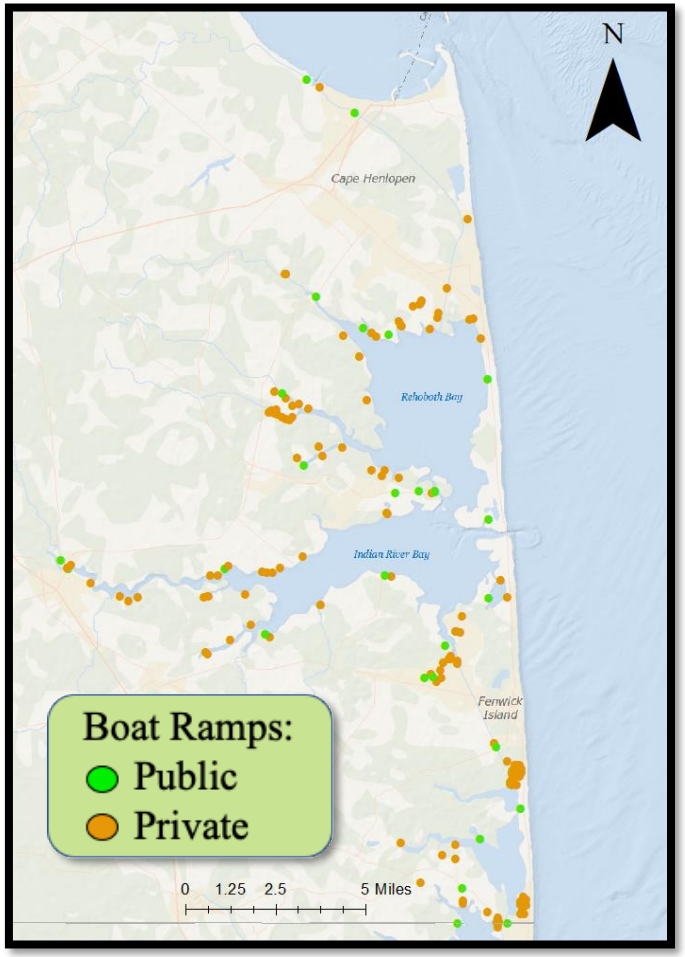
Prioritize State Funded Dredging Projects

2018-2020 – study lead: Sierra Davis, NOAA Coastal Management Fellow

- Project Goal: Ensure that Delaware's navigable waterways are kept open and safe to the maximum extent possible using available resources.
- Outreach: 150 workshop attendees, 1000+ survey responses
- Data-based approach to prioritize state-funded contractual dredging projects
  - Including stakeholder input
  - 2018-2020 – Inland Bays data collection and analysis
  - 2021 – Updates to data, expansion to statewide data collection and analysis

Criteria To Rank

1. Navigability
2. Channels Connecting Bodies of Water
3. Safety
4. Frequency of Dredging Need
5. Environmental Impacts
6. Number of Marinas / Boat Slips
7. Economic Impacts
8. Options for Beneficial Use of Material
9. Number of Boat Ramps
10. Availability of Upland Confined Disposal Facilities



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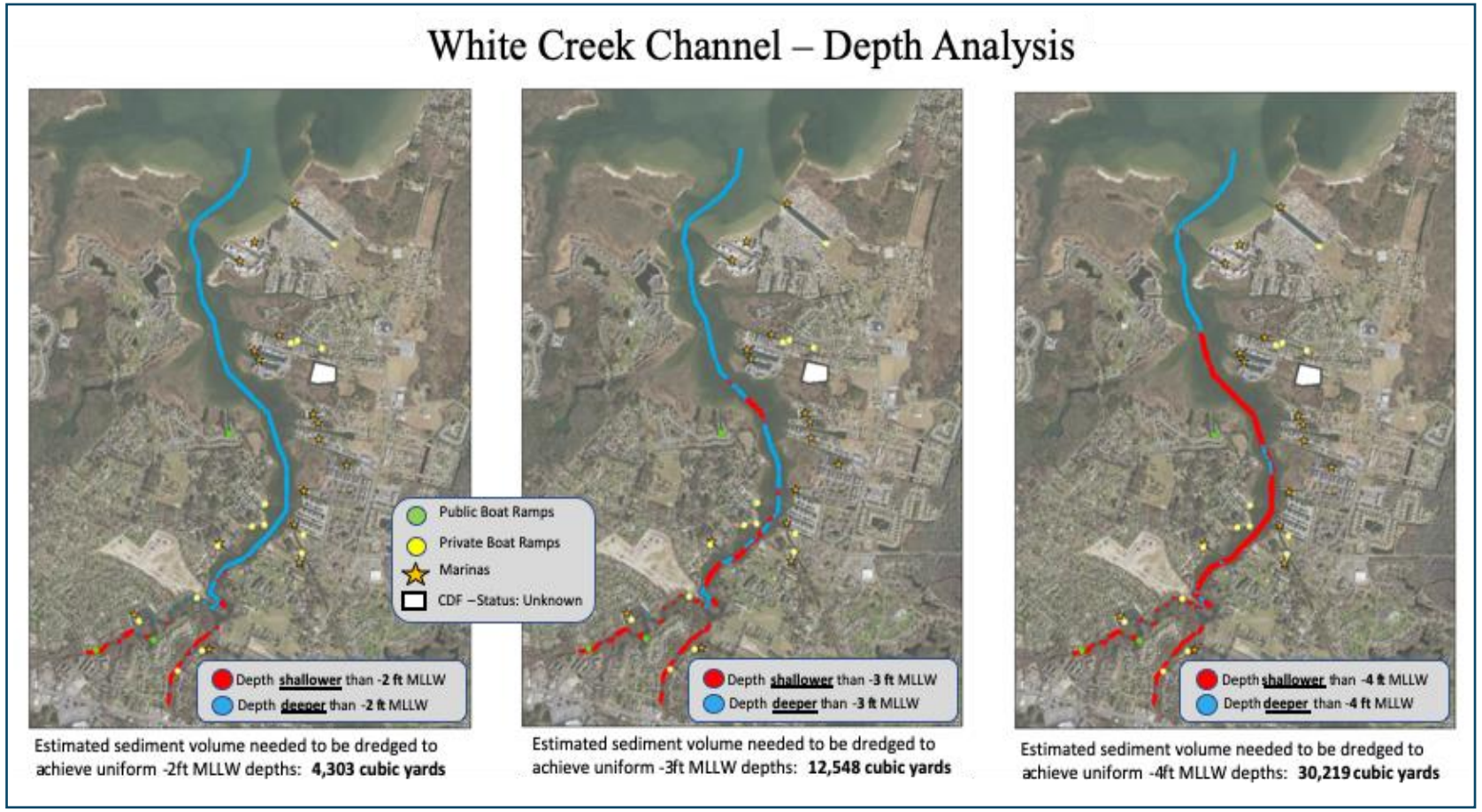
Prioritization Outcome - White Creek

- Highest priority channel overall and across most categories
- Sediment beneficial use option
- 2019 Stakeholder Survey
  - Heavily trafficked channel
  - High volume of public comment for dredging need
- Workshop Interactive Mapping Exercise
  - Received most "issue" stickers
- Numerous public/private boat ramps (16), marinas (15), and boat slips (614)
- Channel surveying reveals need for dredging to maintain navigability to connecting channels



Estimated sediment volume needed to be dredged to achieve uniform -2ft MLLW depths: **4,303 cubic yards**

Estimated sediment volume needed to be dredged to achieve uniform -3ft MLLW depths: **12,548 cubic yards**

Estimated sediment volume needed to be dredged to achieve uniform -4ft MLLW depths: **30,219 cubic yards**

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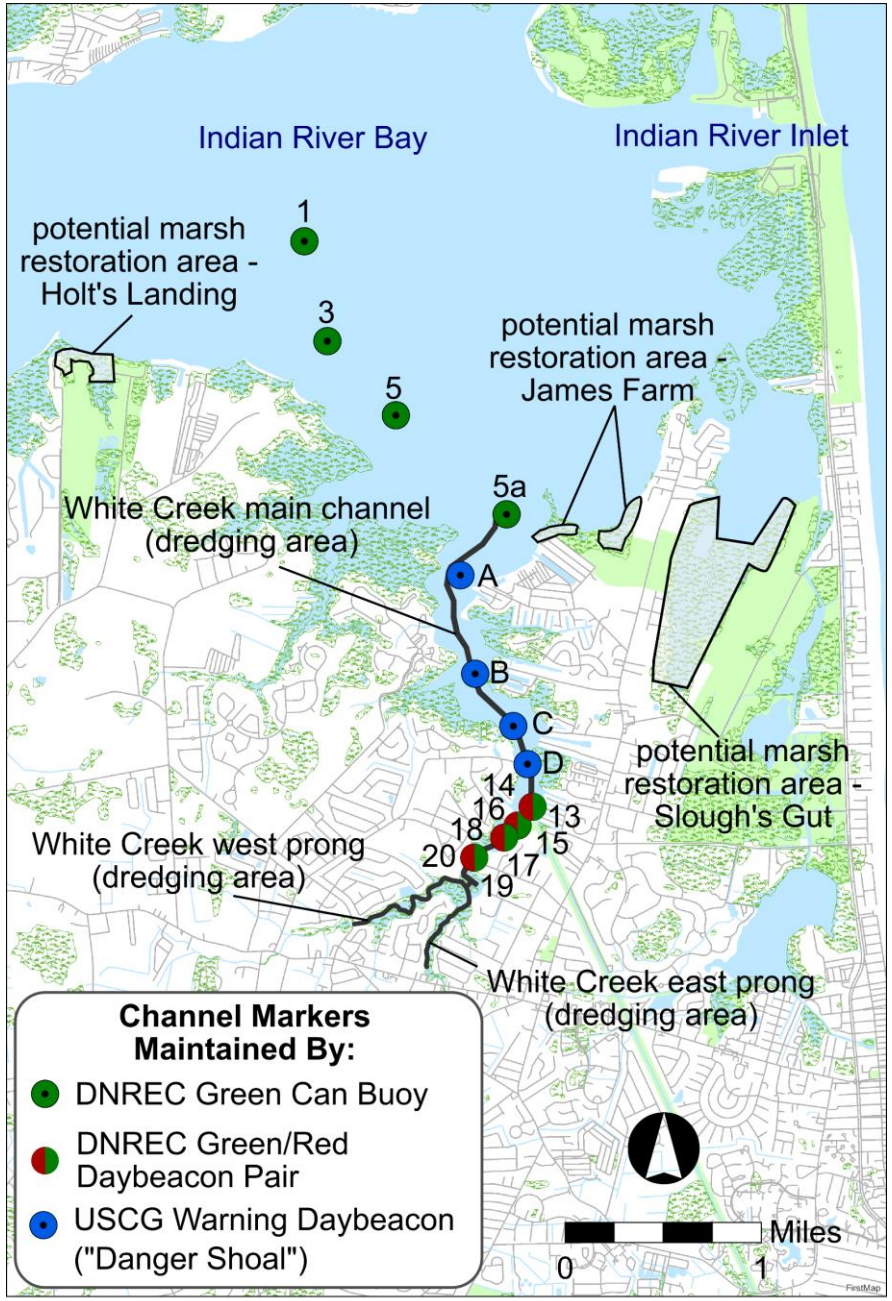
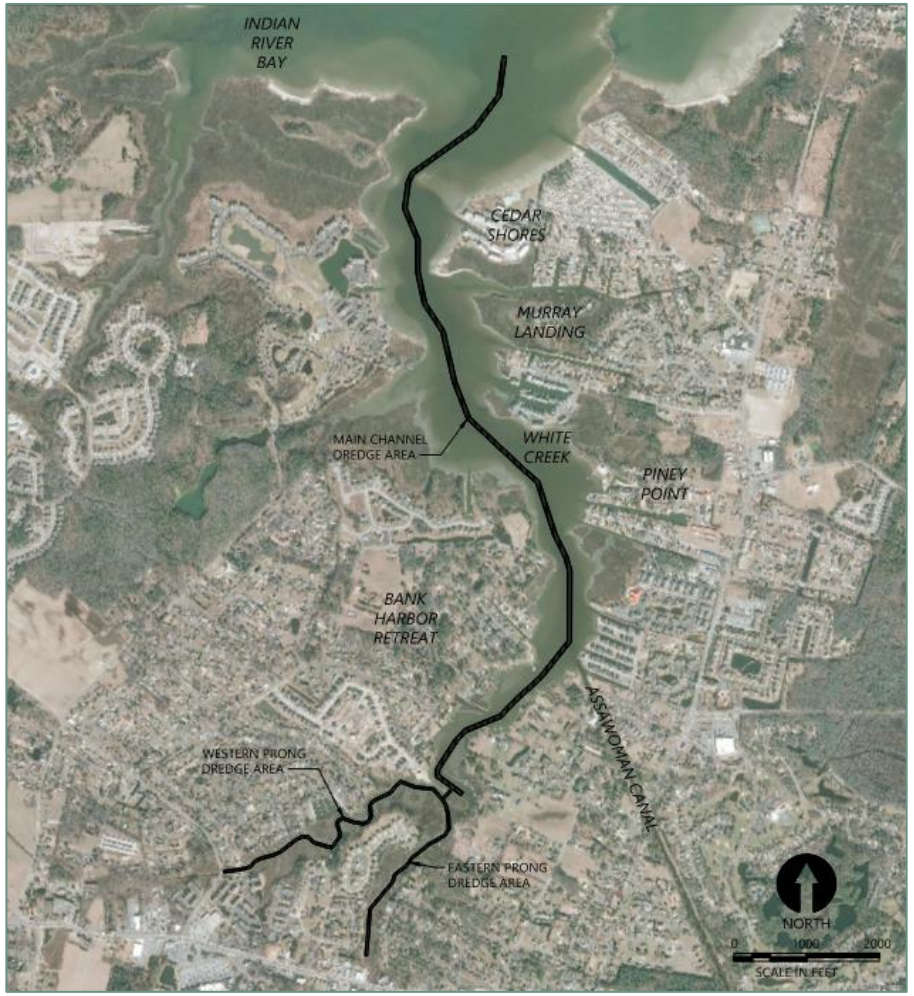
White Creek Channel Marking

- Navigation channel marked by DNREC and US Coast Guard (USCG)



White Creek Project Overview

- White Creek last dredged in early 2000s
  - Material placed on upland property for containment and dewatering
- Maintenance dredging needed for navigation
  - ~35K to 50K cubic yards
- Preference to retain sediments within regional system and provide ecological uplift
  - Thin-layer placement (TLP)
- Dredged material placement alternatives analysis in progress



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Typical Dredge Project Phases

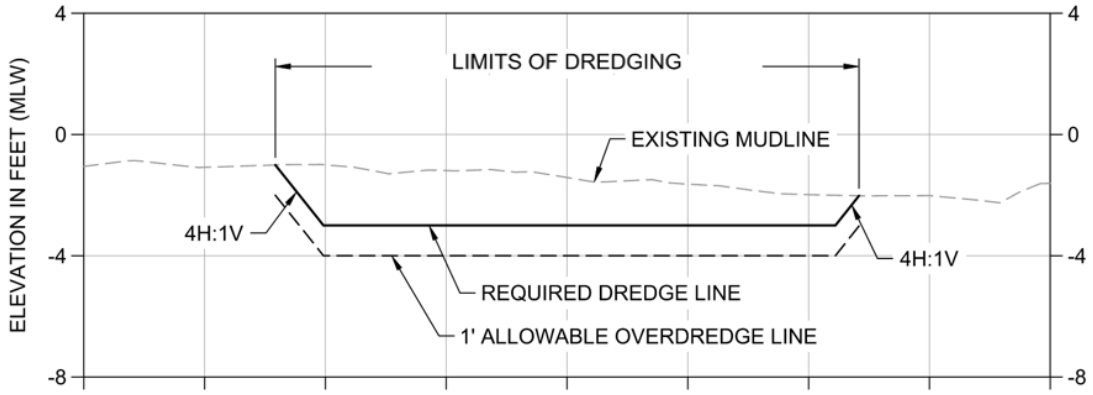
- Pre-Planning/Prioritization
- Planning, Engineering, Design
  ↑ We Are Here ↑
- Permit Acquisition
- Procurement/Bid
- Construction
- Monitoring

White Creek Project Schedule

- **September 2020:** Engineering Phase Kickoff
- **July 2021:** Public Outreach #1 (virtual)
- **Summer 2021:** Permit Applications with Public Comment
  - (6+ month process)
- **Fall 2021:** Public Outreach #2
- **April 2022:** Procurement for Dredging
  - Early procurement ensures availability of qualified firms
- **October 2022 – April 2023:** Planned Dredging Activities
  - Environmental windows restrict dredging work

Dredge Design Highlights

- Hydraulic dredging with material transport via pipeline
- Includes main channel and eastern and western “prongs” in headwaters
- Connection to mouth of Assawoman Canal included
- Generally aligns with historical dredge limits
- Final channel dimensions and depths to be determined as corresponding placement area design advances



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Dredged Material Placement – Select Sites Investigated for Beneficial Use

- **Privately Owned Upland Placement Site**
  - Not available for use to support this project
- **Holt's Landing**
  - State Property (State Parks)
  - 10 Acres – 5,000 – 10,000 CY capacity
- **James Farm**
  - Sussex County Property (CIB Lease)
  - 19 Acres – 10,000 – 15,000 CY capacity
- **DE Seashore State Park**
  - State Property (State Parks)
  - Sussex County Property (CIB Lease)
  - >60 Acres – 25,000 – 35,000 CY capacity

Thin Layer Placement (TLP) Overview

- Source of material and compatibility
- Placement methods and controls
- Lessons learned from recently conducted regional projects
- Monitoring and replanting

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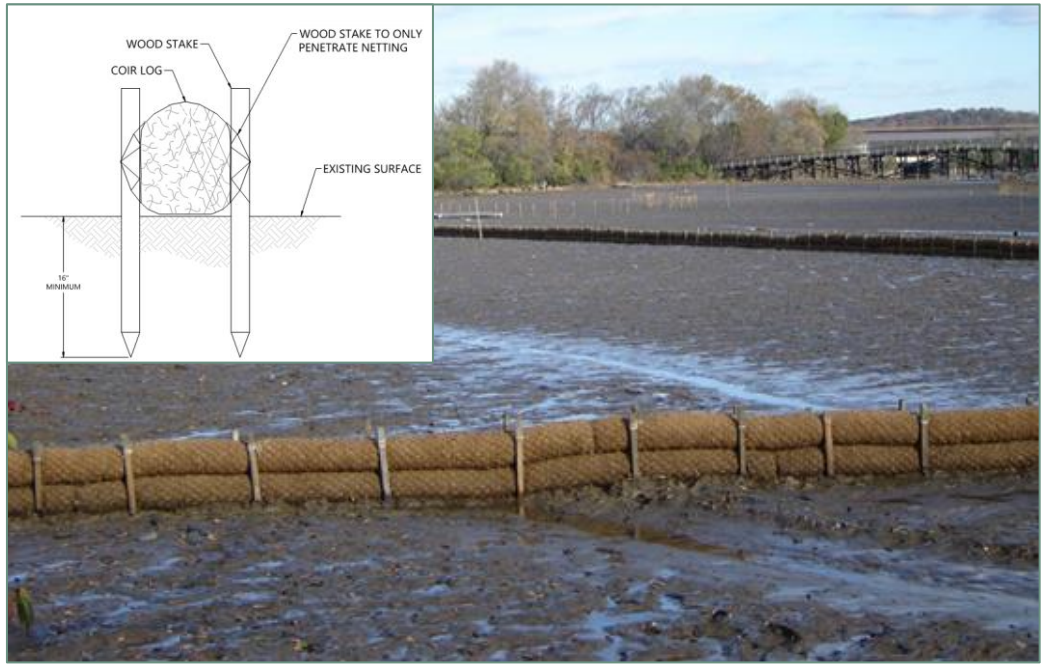
TLP Environmental and Boundary Controls

- Identify TLP placement cells and protect existing features
- Utilize natural materials for control barriers (coir logs, hay bales)
- Containment minimized to the extent possible to reduce site disturbance



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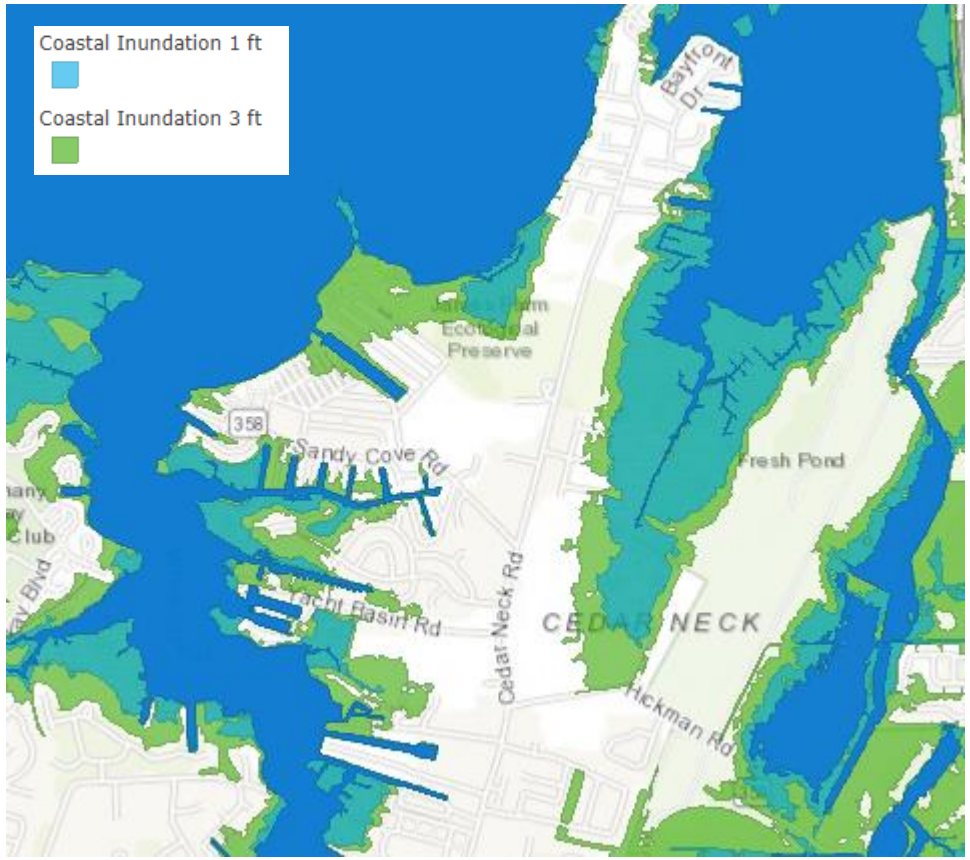
Candidate BU Site Evaluation Criteria

- Existing wetland characteristics
  - Potential for ecological uplift
- Available restoration area/capacity
- Material compatibility
- Land ownership
- Storm inundation and sea level rise (SLR) impacts
- Coastal resiliency benefits
- Proximity to White Creek dredging limits
- Cost and constructability



Source: Delaware FirstMap

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Holt's Landing Conceptual Beneficial Use

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James Farm Conceptual Beneficial Use

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Delaware Seashore State Park - Slough's Gut Conceptual Beneficial Use

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Delaware Seashore State Park – Slough's Gut

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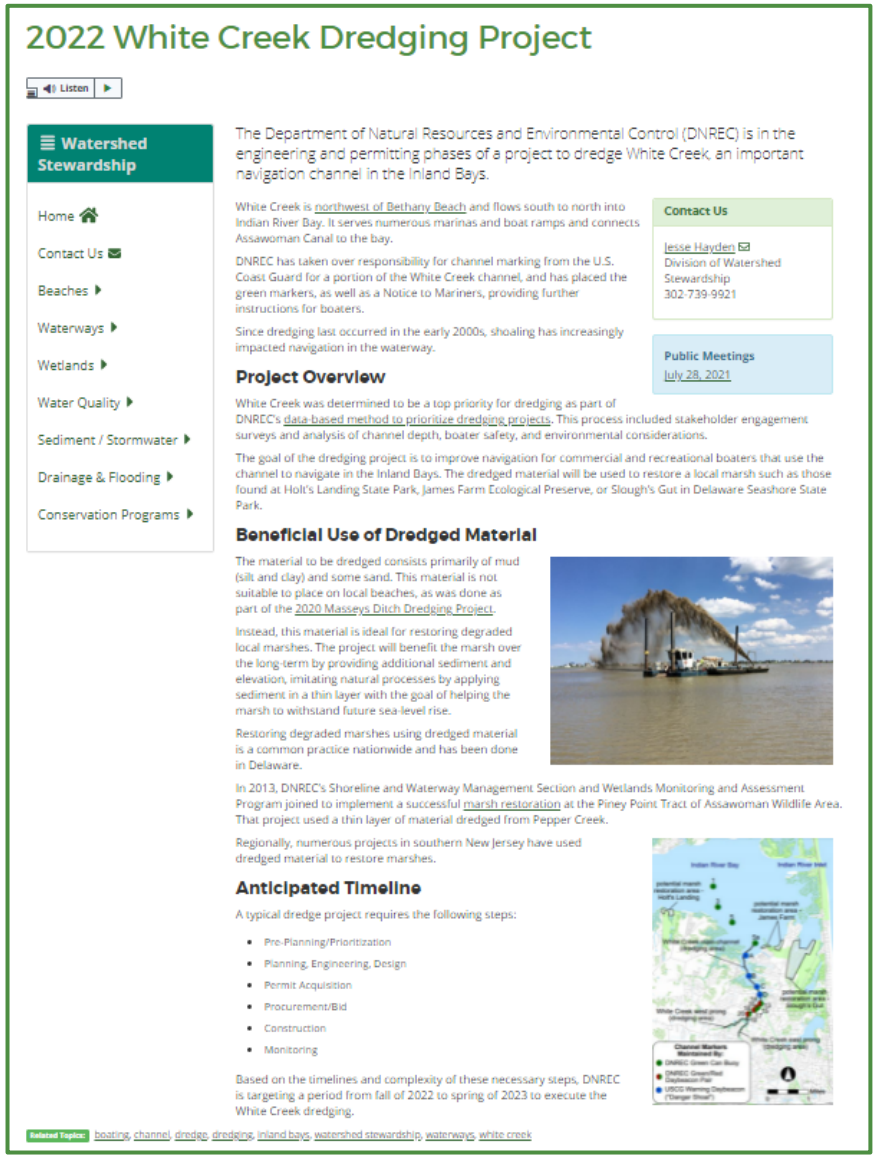
Beneficial Use Sites Preliminary Evaluation

Screening Criteria	Holts Landing TLP	James Farm TLP	DE Seashore State Park – Slough's Gut TLP
Existing Wetland Conditions	Low marsh with isolated ponding	Low marsh with isolated ponding	Low marsh with isolated ponding
Restoration Area/Capacity	10 Acres/5,000 to 10,000 CY	19 Acres/10,000 to 15,000 CY	>60 Acres/25,000 to 35,000 CY
Ownership	State	Sussex County/CIB Lease	State and Sussex County/CIB Lease
Coastal Resiliency Improvement Potential	- Address sea level rise - Shoreline break through protection	- Address sea level rise - Address interior pond expansion - Future peninsula restoration integration	- Address sea level rise - Address interior pond expansion - Integrate variable TLP thickness design for sequenced recovery
Proximity to White Creek (Average Transport Distance)	4 Miles	2.5 Miles	3.5 Miles (Assuming overland routing through James Farm)
Constructability	Not viable stand-alone option due to capacity limitations	Not viable stand-alone option due to capacity limitations	- Potentially viable stand-alone option - May require road crossing

Public Outreach Plan

- Two Public Information Sessions
  - First to be hosted virtually in July 2021
  - Second planned for Fall 2021
- Website
  - Build upon successful use of website during Masseys Ditch Dredging Project
  - Include project details and DNREC point of contact



2022 White Creek Dredging Project

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The Department of Natural Resources and Environmental Control (DNREC) is in the engineering and permitting phases of a project to dredge White Creek, an important navigation channel in the Inland Bays.

White Creek is northwest of Bethany Beach and flows south to north into Indian River Bay. It serves numerous marinas and boat ramps and connects Assawoman Canal to the bay.

DNREC has taken over responsibility for channel marking from the U.S. Coast Guard for a portion of the White Creek channel, and has placed the green markers, as well as a Notice to Mariners, providing further instructions for boaters.

Since dredging last occurred in the early 2000s, shoaling has increasingly impacted navigation in the waterway.

Contact Us

Jesse Hayden
Division of Watershed Stewardship
302-739-9921

Public Meetings

July 28, 2021

Project Overview

White Creek was determined to be a top priority for dredging as part of DNREC's data-based method to prioritize dredging projects. This process included stakeholder engagement surveys and analysis of channel depth, boater safety, and environmental considerations.

The goal of the dredging project is to improve navigation for commercial and recreational boaters that use the channel to navigate in the Inland Bays. The dredged material will be used to restore a local marsh such as those found at Holt's Landing State Park, James Farm Ecological Preserve, or Slough's Gut in Delaware Seashore State Park.

Beneficial Use of Dredged Material

The material to be dredged consists primarily of mud (silt and clay) and some sand. This material is not suitable to place on local beaches, as was done as part of the 2020 Masseys Ditch Dredging Project.

Instead, this material is ideal for restoring degraded local marshes. The project will benefit the marsh over the long-term by providing additional sediment and elevation, imitating natural processes by applying sediment in a thin layer with the goal of helping the marsh to withstand future sea-level rise.

Restoring degraded marshes using dredged material is a common practice nationwide and has been done in Delaware.

In 2013, DNREC's Shoreline and Waterway Management Section and Wetlands Monitoring and Assessment Program joined to implement a successful marsh restoration at the Piney Point Tract of Assawoman Wildlife Area. That project used a thin layer of material dredged from Pepper Creek.

Regionally, numerous projects in southern New Jersey have used dredged material to restore marshes.

Anticipated Timeline

A typical dredge project requires the following steps:

- Pre-Planning/Prioritization
- Planning, Engineering, Design
- Permit Acquisition
- Procurement/Bid
- Construction
- Monitoring

Based on the timelines and complexity of these necessary steps, DNREC is targeting a period from fall of 2022 to spring of 2023 to execute the White Creek dredging.

Related Topics: boating, channel, dredge, dredging, inland bays, watershed stewardship, waterways, white creek

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Summary

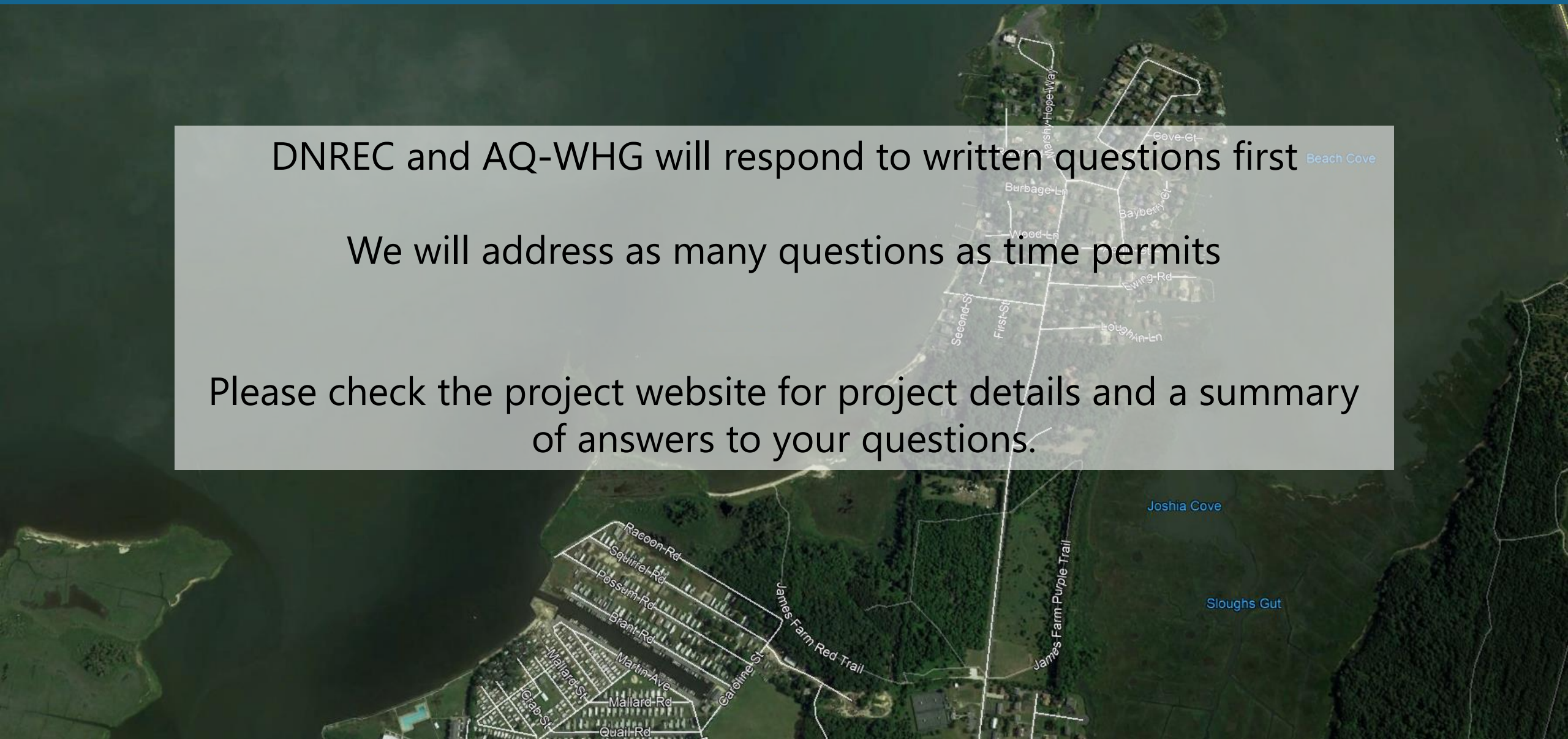
- White Creek ranked top in prioritization for management needs
- Dredge engineering underway, targeting Fall 2022 for start of construction
- Limited upland placement options available. Sediment management alternatives analysis focuses on BU options proximate to project areas.
- TLP on wetland will enhance resiliency and improve wetland quality, using sediment dredged to maintain navigability

Question and Answer Time

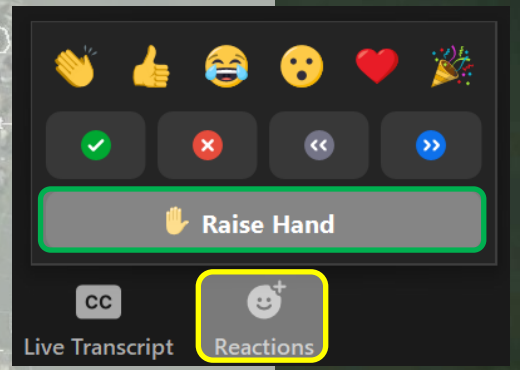
DNREC and AQ-WHG will respond to written questions first

We will address as many questions as time permits

Please check the project website for project details and a summary of answers to your questions.



Live Question and Answer Time



Use the Raise Hand function to indicate to us that you'd like to ask a question. →

Please keep your questions and comments civil and constructive, this portion will be recorded to help us capture speaker names and questions.

We will address as many questions as time permits

Please check the project website for project details and a summary of answers to your questions.